Pre-operative Gastroesophageal Reflux does not affect 30-Day Outcomes in Patients Undergoing Revisional Bariatric Surgery to Single Anastomosis Duodeno-Ileal Bypass (SADI): An MBSAQIP analysis of 933 patients

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INTRODUCTION

- GERD is extremely common in patients undergoing revisional bariatric surgery with rates up to 50%
- GERD shown to increase risk of post operative complications in general and bariatric surgery populations
- SADI is an increasingly popular primary and revisional procedure since its endorsement by the ASMBS
- Limited data exists to guide practitioners in selecting patients for revision to SADI when preoperative reflux is present

OBJECTIVE

(1) Characterize the prevalence of revisional SADI utilization in patients with GERD following primary bariatric surgery

(2) Evaluate the short-term 30-day serious complications and mortality associated with this revisional approach

METHODS

- Retrospective cohort study
- Metabolic and Bariatric Accreditation and Quality Improvement Program (MBSAQIP) database used from 2020-2021 for all patients undergoing revisional bariatric surgery to SADI
- Data included patient factors, index procedure, technical factors, and thirty-day post operative complications
- Patients divided into GERD and non-GERD cohort for analysis
- Chi-squared and *t*-test used for categorical and continues variables
- Multivariable logistic regression model used to identify independent predictors of morbidity

RESULTS

Complication	No Preoperative Reflux (n = 591)	Preoperative Reflux (n = 342)	p-value
Anastomotic leak	15	4	0.154
Bleed	6	6	0.334
Reoperation	21	7	0.194
Intervention	14	4	0.199
Readmission	33	20	0.867
Pneumonia	1	0	0.447
AKI	0	0	N/A
Deep SSI	15	7	0.634
Wound disruption	0	0	N/A
Sepsis	1	3	0.28
Unplanned Intubation	2	0	0.281
CVA	0	1	0.188
VTE	4	2	0.865
Serious comp	36	23	0.702
Superficial SSI	4	2	0.865
Post op deep incisional SSI	4	2	0.865
Post op pneumonia	2	1	0.905
Pulmonary Embolism	0	1	0.188
Acute renal failure	0	0	N/A
Myocardial Infarction	1	1	0.695
Post op sepsis	1	2	0.28
GI Bleed	3	0	0.187
Bowel Obstruction	5	1	0.308

Table 4: Post-operative complications of patients with and without preoperative reflux prior to revision to SADI

AKI – acute kidney injury, SSI – surgical site infection, CVA – cerebrovascular accident, VTE – venous thromboembolism, GI - gastrointestinal

Predictors of Serious Complications	Odds Ratio	95% Confidence Interval	p-value
Patient Factors			
Older age (per 10 years)	1.29	0.99 – 1.66	0.055
Higher BMI (per 5 kg/m^2)	0.92	0.76 – 1.12	0.408
Female			
Comorbidities			
Diabetes			
Non-Insulin Dependent vs Non-Diabetic/Diet Controlled	0.96	0.41 – 2.24	0.929
Insulin Dependent vs Non-Diabetic/Diet Controlled	0.19	0.22 – 1.73	0.141
GERD	1.03	0.58 – 1.84	0.921
DLD	**2.17**	**1.03-4.56**	**0.04 ***
History of MI	**12.2**	**2.79-53-29**	**0.001 ***
Therapeutic Anticoagulation	1.39	0.37 – 5.26	0.624
OSA	0.84	0.43 – 1.64	0.612
Smoker	0.57	0.13 – 2.55	0.145
HTN	0.61	0.21 – 1.2	0.466
Surgical Factors			
Operative Length	1.01	1.004 – 1.01	0.001 *

Table 5: Predictors of serious complications of patients with and without preoperative reflux in patients undergoing revision to SADI

BMI – body mass index, GERD – gastroesophageal reflux, DLD – dyslipidemia, MI – myocardial infarction, OSA – obstructive sleep apnea, HTN - hypertension

DISCUSSION

- First study examining revisional bariatric surgery to SADI with respect to preoperative GERD
- Unadjusted thirty-day complications are not significantly different in revisional SADI patients who report pre-operative GERD
- After adjusting for comorbidity, no association between GERD or other comorbidity outside of prior MI on serious complications
- No difference in readmission, reintervention, reoperation, or 30-day mortality
- Multivariable regression analysis reveal dyslipidemia (OR 2.2) and prior myocardial infarction (12.2) to be significant, independent risk factors for serious complications

CONCLUSIONS

- GERD is not associated with adverse 30-day serious complications in revisional bariatric surgery to SADI
- Dyslipidemia and prior myocardial infarction are independent predictors of serious complications
- SADI is safely performed irrespective of preoperative GERD, patient sex, and other non-cardiac comorbidities
- Those with dyslipidemia and prior myocardial infarction must be exhaustively optimized prior to undergoing any revisional procedure with a multidisciplinary approach

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